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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/775,620

02/10/2004

Byung-kwon Lee

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EXAMINER

HERNANDEZ, NELSON D

ART UNIT

PAPER NUMBER

2622

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/775,620

Applicant(s)

LEE ET AL.

Examiner

Nelson D. Hernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/19/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 2 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohmori et al., US 2004/0119876.**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

**Regarding claim 1**, Ohmori et al. discloses a method of monitoring a digital camera (Figs. 1-3) comprising determining whether an amount of exposure is inappropriate (See step 711 as shown in fig. 5; see also fig. 6) and whether shakiness is present (See step 712 as shown in fig. 5; see also fig. 8)

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during the photographing of an object and notifying a user (see step 734 as shown in fig. 8) of the digital camera when the amount of exposure is inappropriate or when shakiness is present (Page 2, ¶ 0035 – page 3, ¶ 0048; page 4, ¶ 0049-0050).

**Regarding claim 2**, Ohmori et al. discloses calculating a focus value of the object (step 707 in fig. 5); calculating a lower limit (steps 6a2, 6a3 and 6a4 in fig. 6; see also steps 732 and 733 in fig. 8) value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by the user (Page 2, ¶ 0035 – page 3, ¶ 0048; page 4, ¶ 0049-0050); and determining that the amount of exposure is not appropriate (steps 6a2, 6a3, 6a4, 6a5 and 6a6 in fig. 6; see also steps 733 and 734 in fig. 8) and shakiness is present (steps 733 and 734 in fig. 8) when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size (Page 2, ¶ 0035 – page 3, ¶ 0048; page 4, ¶ 0049-0050).

**Regarding claim 5**, Ohmori et al. discloses means for determining whether the amount of exposure is inappropriate and whether shakiness is present during the photographing of an object with a digital camera (Figs. 1-3) comprising: a means (fig. 3: 512) for calculating a focus value of the object (step 707 in fig. 5); a means (Fig. 3: 507) for calculating a lower limit value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by a user; and a means (Fig. 3: 507) for determining that the amount of

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exposure is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size (See figs. 5, 6 and 8; page 2, ¶ 0035 – page 3, ¶ 0048; page 4, ¶ 0049-0050).

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Parulski et al., US 2004/0201699 A1.**

**Regarding claim 1**, Parulski et al. discloses a method of monitoring a digital camera (Fig. 1) comprising determining whether an amount of exposure is inappropriate (See figs. 32 and 35) and whether shakiness is present (See fig. 34) during the photographing of an object and notifying a user of the digital camera when the amount of exposure is inappropriate or when shakiness is present (Page 14, ¶ 0168; page 15, ¶ 0176-0178; page 16, ¶ 0188-0197; page 17, ¶ 0202-0203; page 18, ¶ 0213; page 20, ¶ 0232-0324).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parulski et al., US 2004/0201699 A1 in view of Weintroub et al., US 2003/0117514 A1.**

Regarding claim 2, Parulski et al. discloses calculating a focus value of the object and calculating whether shakiness or incorrect exposure is present (Page 14, ¶ 0168; page 15, ¶ 0176-0178; page 16, ¶ 0188-0197; page 17, ¶ 0202-0203; page 18, ¶ 0213; page 20, ¶ 0232-0324) but does not explicitly disclose calculating a lower limit value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by the user; and determining that the amount of exposure is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size.

However, the concept of determining the quality of an image captured by calculating limit values of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a predetermined compression rate and a resolution and determining that the image

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quality is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size is notoriously well known in the art as taught by Weintroub et al. Weintroub et al. discloses a method for monitoring a digital camera (Figs. 1 and 2) comprising a lens (Fig. 2: 42); a driver (Fig. 2: 16) that drives said lens along an optical axis of said lens; a detector (Fig. 2: 46) that receives an optical image through said lens and outputting signals indicative of said received optical image at an instant of time; a processor (Fig. 2: 30) that processes said signals to provide a digital signal indicative of the optical image and to compress said digital signal to provide a compressed digital signal to provide a size signal indicative of the size of the compressed digital signal; and a controller (Fig. 2: 30) that controls said driver to locate said lens at a position where said size signal becomes greatest. As shown in Weintroub et al., every time a new image is captured at every position a lower value is set to be the threshold to determine whether the lens is at a proper focus position (Page 1, ¶ 0009; page 3, ¶ 0028 –page 4, ¶ 0035; page 5, ¶ 0038-0041), Weintroub et al. also discloses that the aperture of the camera affects the ranges of the subject distance that result in an acceptable photograph (this teaches that the exposure affects the quality of the image taken). The Examiner understands that the blur is related to low focus conditions as well as camera vibration or bad exposure (an over exposed image or underexposed image would result in low contrast image (too dark or too bright)).

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Since the size of the compressed image data is related to whether the image is in focus or not due to the fact that the better focused the image, the higher the contrast in the image which result in a higher image file size after compression as taught in Weintroub et al. and since the blur is related to low focus conditions as well as camera vibration or bad exposure (an over exposed image or underexposed image would result in low contrast image (too dark or too bright)), one having ordinary skill in the art at the time the invention was made would find obvious to use the concept of comparing the compressed image size to a low threshold to determine whether the image is incorrectly exposed or shakiness is present to modify the teaching Parulski et al. to calculate a lower limit value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by the user; and determine that the amount of exposure is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size. The motivation to do so would have been to improve the camera by recognizing that the compressed file associated with a given image increases monotonically in size as the image is brought into focus that would enable the process to be operator independent, does not require the use of a visual display of image data, resulting in a potential cost saving to the manufacturing line and does not require complicated operator training as suggested by Weintroub et al. (Page 1, ¶ 0009; page 2, ¶ 0024).



**Regarding claim 5**, Parulski et al. discloses means for determining whether the amount of exposure is inappropriate (See figs. 32 and 35) and whether shakiness is present (See fig. 34) during the photographing of an object with a digital camera (Fig. 1) comprising: a means for calculating a focus value (Page 14, ¶ 0168; page 15, ¶ 0176-0178) of the object (Page 14, ¶ 0168; page 15, ¶ 0176-0178; page 16, ¶ 0188-0197; page 17, ¶ 0202-0203; page 18, ¶ 0213; page 20, ¶ 0232-0324).

Parulski et al does not explicitly disclose a means for calculating a lower limit value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by a user; and a means for determining that the amount of exposure is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size.

However, the concept of determining the quality of an image captured by calculating limit values of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a predetermined compression rate and a resolution and determining that the image quality is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size is notoriously well known in the art as taught by Weintroub et al. Weintroub et al. discloses a method for monitoring a digital camera (Figs. 1 and 2) comprising a lens (Fig. 2:

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42); a driver (Fig. 2: 16) that drives said lens along an optical axis of said lens; a detector (Fig. 2: 46) that receives an optical image through said lens and outputting signals indicative of said received optical image at an instant of time; a processor (Fig. 2: 30) that processes said signals to provide a digital signal indicative of the optical image and to compress said digital signal to provide a compressed digital signal to provide a size signal indicative of the size of the compressed digital signal; and a controller (Fig. 2: 30) that controls said driver to locate said lens at a position where said size signal becomes greatest. As shown in Weintroub et al., every time a new image is captured at every position a lower value is set to be the threshold to determine whether the lens is at a proper focus position (Page 1, ¶ 0009; page 3, ¶ 0028 –page 4, ¶ 0035; page 5, ¶ 0038-0041), Weintroub et al. also discloses that the aperture of the camera affects the ranges of the subject distance that result in an acceptable photograph (this teaches that the exposure affects the quality of the image taken). The Examiner understands that the blur is related to low focus conditions as well as camera vibration or bad exposure (an over exposed image or underexposed image would result in low contrast image (too dark or too bright)).

Since the size of the compressed image data is related to whether the image is in focus or not due to the fact that the better focused the image, the higher the contrast in the image which result in a higher image file size after compression as taught in Weintroub et al. and since the blur is related to low focus conditions as well as camera vibration or bad exposure (an over exposed image or underexposed image would result in low contrast image (too dark or too

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bright)), one having ordinary skill in the art at the time the invention was made would find obvious to use the concept of comparing the compressed image size to a low threshold to determine whether the image is incorrectly exposed or shakiness is present to modify the teaching Parulski et al. to calculate a lower limit value of a compressed file size wherein the lower limit value of the compressed file size corresponds to a focus value of the object at a compression rate and a resolution set by the user; and determine that the amount of exposure is not appropriate and shakiness is present when the size of a compressed file of image data obtained from the photographing of the object is smaller than the lower limit value of the compressed file size. The motivation to do so would have been to improve the camera by recognizing that the compressed file associated with a given image increases monotonically in size as the image is brought into focus that would enable the process to be operator independent, does not require the use of a visual display of image data, resulting in a potential cost saving to the manufacturing line and does not require complicated operator training as suggested by Weintroub et al. (Page 1, ¶ 0009; page 2, ¶ 0024).

***Allowable Subject Matter***

7. **Claims 3 and 4** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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8. The following is a statement of reasons for the indication of allowable subject matter:

**Regarding claim 3**, the main reason for indication of allowable subject matter is because the prior art fails to teach or reasonably suggest, assuming that X is the focus value of the object, N is the number of samples,  $X_i$  is the focus value of an i-th sample,  $Y_i$  is the size of a compressed file size of the i-th sample at the compression rate and resolution set by the user,

$$a \text{ is } \frac{\left( \sum_{i=1}^N Q X_i \right) \left( \sum_{i=1}^N Q Y_i \right) - N \left( \sum_{i=1}^N Q X_i Y_i \right)}{\left( \sum_{i=1}^N Q X_i \right)^2 - N \left( \sum_{i=1}^N Q X_i^2 \right)}, \text{ and } b \text{ is } \frac{\left( \sum_{i=1}^N Q Y_i \right) \left( \sum_{i=1}^N Q X_i^2 \right) - N \left( \sum_{i=1}^N Q X_i \right) \left( \sum_{i=1}^N Q X_i Y_i \right)}{N \left( \sum_{i=1}^N Q X_i^2 \right) - \left( \sum_{i=1}^N Q X_i \right)^2},$$

the lower limit of the compressed file size is set as  $k(aX+b)$ , wherein  $0 < k < 1$ , including all the limitations of claims 1 and 2.

### **Contact**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson D. Hernandez whose telephone number is (571) 272-7311. The examiner can normally be reached on 8:30 A.M. to 6:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nelson D. Hernandez  
Examiner  
Art Unit 2622

NDHH  
May 5, 2007



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